



RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/663,650
Source: IFWO
Date Processed by STIC: 7/1/04

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

~~TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER~~
~~VERSION 4.2 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND~~
~~TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:~~

<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box-1450, Alexandria, VA 22313-1450
3. ~~Hand-Carry, Federal-Express, United Parcel Service, or other delivery service (EFFECTIVE 06/05/04):~~
U.S. Patent and Trademark Office, 220 20th Street S., Customer Window, Mail Stop Sequence, Crystal Plaza Two, Lobby, Room 1B03, Arlington, VA 22202

Revised 05/17/04



IFWO

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

3 <110> APPLICANT: Kabushiki Kaisha Hayashibara Seibutsu Kagaku Kenkyujo
W--> 4 <120> TITLE OF INVENTION: Trehalose receptor and method for detecting trehalose with the same
C--> 5 <140> CURRENT APPLICATION NUMBER: US/10/663,650
C--> 5 <141> CURRENT FILING DATE: 2003-09-17
W--> 0 <130> FILE REFERENCE:
W--> 5 <160> NUMBER OF SEQ ID: 24

error throughout

ERRORED SEQUENCES

357 <210> SEQ ID NO: 6 *see p. 3, too*
358 <211> LENGTH: 1353
359 <212> TYPE: DNA
360 <213> ORGANISM: Mus musculus
362 <300> PUBLICATION INFORMATION:
363 <308> DATABASE ACCESSION NO: GENBANK M80632
W--> 364 <300> PUBLICATION INFORMATION: 6
366 caggccctgt gatgtcacct ggtggtctgt gaagcgccca cc 42
368 atg gcc cgg tcc ctg act tgg ggc tgc tgt ccc tgg tgc ctg aca gag 90
369 Met Ala Arg Ser Leu Thr Trp Gly Cys Cys Pro Trp Cys Leu Thr Glu
370 1 5 10 15
371 gag gag aag act gcc gcc aga atc gac cag gag atc aac agg att ttg 138
372 Glu Glu Lys Thr Ala Ala Arg Ile Asp Gln Glu Ile Asn Arg Ile Leu
373 20 25 30
374 ttg gaa cag aaa aaa caa gag cgc gag gaa ttg aaa ctc ctg ctg ttg 186
375 Leu Glu Gln Lys Lys Gln Glu Arg Glu Glu Leu Lys Leu Leu Leu Leu
376 35 40 45
377 ggg cct ggt gag agc ggg aag agt acg ttc atc aag cag atg cgc atc 234
378 Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile
379 50 55 60
380 att cac ggt gtg ggc tac tgc gag gag gac cgc aga gcc ttc cgg ctg 282
381 Ile His Gly Val Gly Tyr Ser Glu Glu Asp Arg Arg Ala Phe Arg Leu
382 65 70 75 80
383 ctc atc tac cag aac atc ttc gtc tcc atg cag gcc atg ata gat gcg 330
384 Leu Ile Tyr Gln Asn Ile Phe Val Ser Met Gln Ala Met Ile Asp Ala
385 85 90 95
386 atg gac cgg ctg cag atc ccc ttc agc agg cct gac agc aag cag cac 378
387 Met Asp Arg Leu Gln Ile Pro Phe Ser Arg Pro Asp Ser Lys Gln His
388 100 105 110
389 gcc agc cta gtg atg acc cag gac ccc tat aaa gtg agc aca ttc gag 426
390 Ala Ser Leu Val Met Thr Gln Asp Pro Tyr Lys Val Ser Thr Phe Glu
391 115 120 125
392 aag cca tat gca gtg gcc atg cag tac ctg tgg cgg gac gcg ggc atc 474

*Does Not Comply
Corrected Diskette Needed*

*insert
(3097)
and response*

*Whenever <308> has a
response, insert <3097
and response.
Mandatory.*

*<3097> line
lists the
Database Entry
Date*

*This error
also appears
in sequences
1 through 3,
too.*

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

393 Lys Pro Tyr Ala Val Ala Met Gln Tyr Leu Trp Arg Asp Ala Gly Ile
394      130      135      140
395 cgt gca tgc tac gag cga agg cgt gaa ttc cac ctt ctg gac tcc gcg 522
396 Arg Ala Cys Tyr Glu Arg Arg Arg Glu Phe His Leu Leu Asp Ser Ala
397 145      150      155      160
398 gtg tat tac ctg tca cac ctg gag cgc ata tca gag gac agc tac atc 570
399 Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Ser Glu Asp Ser Tyr Ile
400      165      170      175
401 ccc act gcg caa gac gtg ctg cgc agt cgc atg ccc acc aca ggc atc 618
402 Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile
403      180      185      190
404 aat gag tac tgc ttc tcc gtg aag aaa acc aaa ctg cgc atc gtg gat 666
405 Asn Glu Tyr Cys Phe Ser Val Lys Lys Thr Lys Leu Arg Ile Val Asp
406      195      200      205
407 gtt ggt ggc cag agg tca gag cgt agg aaa tgg att cac tgt ttc gag 714
408 Val Gly Gly Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu
409      210      215      220
410 aac gtg att gcc ctc atc tac ctg gcc tcc ctg agc gag tat gac cag 762
411 Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln
412 225      230      235      240
413 tgc cta gag gag aac gat cag gag aac cgc atg gag gag agt ctc gct 810
414 Cys Leu Glu Glu Asn Asp Gln Glu Asn Arg Met Glu Glu Ser Leu Ala
415      245      250      255
416 ctg ttc agc acg atc cta gag ctg ccc tgg ttc aag agc acc tcg gtc 858
417 Leu Phe Ser Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val
418      260      265      270
419 atc ctc ttc ctc aac aag acg gac atc ctg gaa gat aag att cac acc 906
420 Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Asp Lys Ile His Thr
421      275      280      285
422 tcc cac ctg gcc aca tac ttc ccc agc ttc cag gga ccc cgg cga gac 954
423 Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Arg Arg Asp
424      290      295      300
425 gca gag gcc gcc aag agc ttc atc ttg gac atg tat gcg cgc gtg tac 1002
426 Ala Glu Ala Ala Lys Ser Phe Ile Leu Asp Met Tyr Ala Arg Val Tyr
427 305      310      315      320
428 gcg agc tgc gca gag ccc cag gac ggt ggc agg aaa ggc tcc cgc gcg 1050
429 Ala Ser Cys Ala Glu Pro Gln Asp Gly Gly Arg Lys Gly Ser Arg Ala
430      325      330      335
431 cgc cgc ttc ttc gca cac ttc acc tgt gcc acg gac acg caa agc gtc 1098
432 Arg Arg Phe Phe Ala His Phe Thr Cys Ala Thr Asp Thr Gln Ser Val
433      340      345      350
434 cgc agc gtg ttc aag gac gtg cgg gac tcg gtg ctg gcc cgg tac ctg 1146
435 Arg Ser Val Phe Lys Asp Val Arg Asp Ser Val Leu Ala Arg Tyr Leu
436      355      360      365
437 gac gag atc aac ctg ctg 1164
438 Asp Glu Ile Asn Leu Leu
439      370
440 tgacgcggga cagggaaacc caagcgcgac gcgtcgtggc gaggacatac ctccccctgg 1224
441 tggccgcgcg tggaactgca ggtccaggag ctgccaaagt ggggaagccag cccacaggag 1284

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

442 agagtcctgc ttctactggg ccccaagcca gctcctgtaa ttattcctcg ccttctctag 1344
 E--> 443 tgttggaag
 445 <210> SEQ ID NO: 7
 446 <211> LENGTH: 29
 447 <212> TYPE: DNA
 448 <213> ORGANISM: Artificial Sequence
 W--> 450 <220> FEATURE:
 W--> 450 <223> OTHER INFORMATION:
 W--> 450 <400> 7
 E--> 451 cgcaagcttt ctgtgaagcg cccaccatg
 453 <210> SEQ ID NO: 8
 454 <211> LENGTH: 37
 455 <212> TYPE: DNA
 456 <213> ORGANISM: Artificial Sequence
 W--> 458 <220> FEATURE:
 W--> 458 <223> OTHER INFORMATION:
 W--> 458 <400> 8
 E--> 459 gcattacgat gcggccgcgc gtcacagcag gttgatc
 461 <210> SEQ ID NO: 9
 462 <211> LENGTH: 2060
 463 <212> TYPE: DNA
 464 <213> ORGANISM: Homosapiens
 466 <300> PUBLICATION INFORMATION:
 467 <308> DATABASE ACCESSION NO: GENBANK M63904
 469 <400> 9
 470 tgttcccagc actcaagcct tgccaccgcc gagccgggct tcctgggtgt ttcaggcaag 60
 471 gaagtctagg tccctggggg gtgaccccca aggaaaaggc agcctccctg cgcacccggt 120
 472 tgcccggagc cctctccagg gccggctggg ctgggggttg ccttgccag caggggccc 180
 473 ggggcgatgc caccgggtgc cgactgaggc caccgcacc 219
 474 atg gcc cgc tgc ctg acc tgg cgc tgc tgc ccc tgg tgc ctg acg gag 267
 475 Met Ala Arg Ser Leu Thr Trp Arg Cys Cys Pro Trp Cys Leu Thr Glu
 476 1 5 10 15
 477 gat gag aag gcc gcc gcc cgg gtg gac cag gag atc aac agg atc ctc 315
 478 Asp Glu Lys Ala Ala Ala Arg Val Asp Gln Glu Ile Asn Arg Ile Leu
 479 20 25 30
 480 ttg gag cag aag aag cag gac cgc ggg gag ctg aag ctg ctg ctt ttg 363
 481 Leu Glu Gln Lys Lys Gln Asp Arg Gly Glu Leu Lys Leu Leu Leu Leu
 482 35 40 45
 483 ggc cca ggc gag agc ggg aag agc acc ttc atc aag cag atg cgg atc 411
 484 Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile
 485 50 55 60
 486 atc cac ggc gcc gcc tac tgc gag gag gag cgc aag ggc ttc cgg ccc 459
 487 Ile His Gly Ala Gly Tyr Ser Glu Glu Glu Lys Gly Phe Arg Pro
 488 65 70 75 80
 489 ctg gtc tac cag aac atc ttc gtg tcc atg cgg gcc atg atc gag gcc 507
 490 Leu Val Tyr Gln Asn Ile Phe Val Ser Met Arg Ala Met Ile Glu Ala
 491 85 90 95
 492 atg gag cgg ctg cag att cca ttc agc agg ccc gag agc aag cac cac 555
 493 Met Glu Arg Leu Gln Ile Pro Phe Ser Arg Pro Glu Ser Lys His His

1353 ← insert
 cumulative
 nucleotide
 total at
 right margin
 of each line.

see p. 22 for error
 explanation

29 ← insert

p. 22

37 ← insert

insert

<3097 and response

see p. 4

IMPORTANT

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

494          100          105          110
495 gct agc ctg gtc atg agc cag gac ccc tat aaa gtg acc acg ttt gag 603
496 Ala Ser Leu Val Met Ser Gln Asp Pro Tyr Lys Val Thr Thr Phe Glu
497          115          120          125
498 aag cgc tac gct gcg gcc atg cag tgg ctg tgg agg gat gcc ggc atc 651
499 Lys Arg Tyr Ala Ala Ala Met Gln Trp Leu Trp Arg Asp Ala Gly Ile
500          130          135          140
E--> 501 cgg gcc tgc tat gag cgt cgg cgg gaa ttc cac ctg ctc gat tca gcc 669 699
502 Arg Ala Cys Tyr Glu Arg Arg Arg Glu Phe His Leu Leu Asp Ser Ala
503 145          150          155          160
504 gtg tac tac ctg tcc cac ctg gag cgc atc acc gag gag ggc tac gtc 747
505 Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Thr Glu Glu Gly Tyr Val
506          165          170          175
507 ccc aca gct cag gac gtg ctc cgc agc cgc atg ccc acc act ggc atc 795
508 Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile
509          180          185          190
510 aac gag tac tgc ttc tcc gtg cag aaa acc aac ctg cgg atc gtg gac 843
511 Asn Glu Tyr Cys Phe Ser Val Gln Lys Thr Asn Leu Arg Ile Val Asp
512          195          200          205
513 gtc ggg ggc cag aag tca gag cgt aag aaa tgg atc cat tgt ttc gag 891
514 Val Gly Gly Gln Lys Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu
515          210          215          220
516 aac gtg atc gcc ctc atc tac ctg gcc tca ctg agt gaa tac gac cag 939
517 Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln
518 225          230          235          240
519 tgc ctg gag gag aac aac cag gag aac cgc atg aag gag agc ctc gca 987
520 Cys Leu Glu Glu Asn Asn Gln Glu Asn Arg Met Lys Glu Ser Leu Ala
521          245          250          255
522 ttg ttt ggg act atc ctg gaa cta ccc tgg ttc aaa agc aca tcc gtc 1035
523 Leu Phe Gly Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val
524          260          265          270
525 atc ctc ttt ctc aac aaa acc gac atc ctg gag gag aaa atc ccc acc 1083
526 Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Glu Lys Ile Pro Thr
527          275          280          285
528 tcc cac ctg gct acc tat ttc ccc agt ttc cag ggc cct aag cag gat 1131
529 Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Lys Gln Asp
530          290          295          300
531 gct gag gca gcc aag agg ttc atc ctg gac atg tac acg agg atg tac 1179
532 Ala Glu Ala Ala Lys Arg Phe Ile Leu Asp Met Tyr Thr Arg Met Tyr
533 305          310          315          320
534 acc ggg tgc gtg gac ggc ccc gag ggc agc aag aag ggc gca cga tcc 1227
535 Thr Gly Cys Val Asp Gly Pro Glu Gly Ser Lys Lys Gly Ala Arg Ser
536          325          330          335
537 cga cgc ctt ttc agc cac tac aca tgt gcc aca gac aca cag aac atc 1275
538 Arg Arg Leu Phe Ser His Tyr Thr Cys Ala Thr Asp Thr Gln Asn Ile
539          340          345          350
540 cgc aag gtc ttc aag gac gtg cgg gac tcg gtg ctc gcc cgc tac ctg 1323
541 Arg Lys Val Phe Lys Asp Val Arg Asp Ser Val Leu Ala Arg Tyr Leu
542          355          360          365

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

543 gac gag atc aac ctg ctg 1341
 544 Asp Glu Ile Asn Leu Leu
 545 370
 546 tgacccaggc cccacctggg gcaggcggca ccggcgggaggt ggtgggaggt gggagtggt 1401
 547 gcagggaccc tagtgtctct gtctatctct ccagcctcgg cccacacgca agggagtcgg 1461
 548 gggacggccc gctgctggcc gctctcttct ctgcctctca ccaggacagc cgccccccag 1521
 549 ggtactcctg cccttgcttg actcagtttc cctcctttga aagggaagga gcaaaacggc 1581
 550 cttttgggat gccagggtgg atgaaaaggt gaagaaatca ggggattgag acttgggtgg 1641
 551 gtgggcatct ctcaggagcc ccatctccgg gcgtgtcacc tcctgggcag ggttctggga 1701
 552 ccctctgtgg gtgacgcaca ccctgggatg gggctagtag agccttcagg cgcttcggg 1761
 553 cgtggactct ggcgcactct agtggacagg agaaggaacg ccttcaggga acctgtggac 1821
 554 taggggtgca gggacttccc ttgcaagggt gtaacagacc gctggaaaac actgtcactt 1881
 555 tcagagctcg gtggctcaca gcgtgtcctg ccccggtttg cggacgagag aaatcgcggc 1941
 556 ccacaagcat ccccatccc ttgcaggctg ggggctgggc atgctgcac ttaacctttt 2001
 557 gtattttatt cctcaccttc tgcagggtc cgtgcgggct gaaattaaag atttcttag 2060
 559 <210> SEQ ID NO: 10
 560 <211> LENGTH: 2679
 561 <212> TYPE: DNA
 562 <213> ORGANISM: Homosapiens
 564 <300> PUBLICATION INFORMATION:
 565 <308> DATABASE ACCESSION NO: GENBANK NM_002073
 566 <300> PUBLICATION INFORMATION: 10
 567 gagaccagga cc 12
 569 atg gga tgt cgg caa agc tca gag gaa aaa gaa gca gcc cgg cgg tcc 60
 570 Met Gly Cys Arg Gln Ser Ser Glu Glu Lys Glu Ala Ala Arg Arg Ser
 571 1 5 10 15
 572 cgg aga att gac cgc cac ctg cgc tca gag agc cag cgg caa cgc cgc 108
 573 Arg Arg Ile Asp Arg His Leu Arg Ser Glu Ser Gln Arg Gln Arg Arg
 574 20 25 30
 575 gaa atc aag ctg ctc ctg ctg ggc acc agc aac tca ggc aag agc acc 156
 576 Glu Ile Lys Leu Leu Leu Leu Gly Thr Ser Asn Ser Gly Lys Ser Thr
 577 35 40 45
 578 atc gtc aaa cag atg aag atc atc cac agc ggc ggc ttc aac ctg gag 204
 579 Ile Val Lys Gln Met Lys Ile Ile His Ser Gly Gly Phe Asn Leu Glu
 580 50 55 60
 581 gcc tgc aag gag tac aag ccc ctc atc atc tac aat gcc atc gac tgc 252
 582 Ala Cys Lys Glu Tyr Lys Pro Leu Ile Ile Tyr Asn Ala Ile Asp Ser
 583 65 70 75 80
 584 ctg acc cgc atc atc cgg gcc ctg gcc gcc ctc agg atc gac ttc cac 300
 585 Leu Thr Arg Ile Ile Arg Ala Leu Ala Ala Leu Arg Ile Asp Phe His
 586 85 90 95
 587 aac ccc gac cgc gcc tac gac gct gtg cag ctc ttt gcg ctg acg ggc 348
 588 Asn Pro Asp Arg Ala Tyr Asp Ala Val Gln Leu Phe Ala Leu Thr Gly
 589 100 105 110
 590 ccc gct gag agc aag ggc gag atc aca ccc gag ctg ctg ggt gtc atg 396
 591 Pro Ala Glu Ser Lys Gly Glu Ile Thr Pro Glu Leu Gly Val Met
 592 115 120 125
 593 cga cgg ctc tgg gcc gac cca ggg gca cag gcc tgc ttc agc cgc tcc 444
 594 Arg Arg Leu Trp Ala Asp Pro Gly Ala Gln Ala Cys Phe Ser Arg Ser

*Insert <3097 and response**see p.7*

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

595      130      135      140
596 agc gag tac cac ctg gag gac aac gcg gcc tac tac ctg aac gac ctg 492
597 Ser Glu Tyr His Leu Glu Asp Asn Ala Ala Tyr Tyr Leu Asn Asp Leu
598 145      150      155      160
599 gag cgc atc gcc gca gct gac tat atc ccc act gtc gag gac atc ctg 540
600 Glu Arg Ile Ala Ala Ala Asp Tyr Ile Pro Thr Val Glu Asp Ile Leu
601      165      170      175
602 cgc tcc cgg gac atg acc acg ggc att gtg gag aac aag ttc acc ttc 588
603 Arg Ser Arg Asp Met Thr Thr Gly Ile Val Glu Asn Lys Phe Thr Phe
604      180      185      190
605 aag gag ctc acc ttc aag atg gtg gac gtg ggg ggg cag agg tca gag 636
606 Lys Glu Leu Thr Phe Lys Met Val Asp Val Gly Gly Gln Arg Ser Glu
607      195      200      205
608 cgc aaa aag tgg atc cac tgc ttc gag ggc gtc aca gcc atc atc ttc 684
609 Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
610      210      215      220
611 tgt gtg gag ctc agc ggc tac gac ctg aaa ctc tac gag gat aac cag 732
612 Cys Val Glu Leu Ser Gly Tyr Asp Leu Lys Leu Tyr Glu Asp Asn Gln
613 225      230      235      240
614 aca agt cgg atg gca gag agc ttg cgc ctc ttt gac tcc atc tgc aac 780
615 Thr Ser Arg Met Ala Glu Ser Leu Arg Leu Phe Asp Ser Ile Cys Asn
616      245      250      255
617 aac aac tgg ttc atc aac acc tca ctc atc ctc ttc ctg aac aag aag 828
618 Asn Asn Trp Phe Ile Asn Thr Ser Leu Ile Leu Phe Leu Asn Lys Lys
619      260      265      270
620 gac ctg ctg gca gag aag atc cgc cgc atc ccg ctc acc atc tgc ttt 876
621 Asp Leu Leu Ala Glu Lys Ile Arg Arg Ile Pro Leu Thr Ile Cys Phe
622      275      280      285
623 ccc gag tac aag ggc cag aac acg tac gag gag gcc gct gtc tac atc 924
624 Pro Glu Tyr Lys Gly Gln Asn Thr Tyr Glu Glu Ala Ala Val Tyr Ile
625      290      295      300
626 cag cgg cag ttt gaa gac ctg aac cgc aac aag gag acc aag gag atc 972
627 Gln Arg Gln Phe Glu Asp Leu Asn Arg Asn Lys Glu Thr Lys Glu Ile
628 305      310      315      320
629 tac tcc cac ttc acc tgc gcc acc gac acc agt aac atc cag ttt gtc 1020
630 Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Ser Asn Ile Gln Phe Val
631      325      330      335
632 ttc gac gcg gtg aca gac gtc atc ata cag aac aat ctc aag tac att 1068
633 Phe Asp Ala Val Thr Asp Val Ile Ile Gln Asn Asn Leu Lys Tyr Ile
634      340      345      350
635 ggc ctt tgc 1077
636 Gly Leu Cys
637      355
639 tgaggagctg ggccccggggc gcctgcctat ggtgaaaccc acgggggtgtc atgccccaac 1137
640 gcgtgctaga gaggcccaat ccaggggcag aaaacagggg gcctaaagaa tgtccccac 1197
641 cccttgccct ctgcctcctt ggccccacat ttctgcaaac ataaatattt acggatagat 1257
642 tgctaggtag atagacacac acacatgcac acacacacat ctggagatgg caaaatcctc 1317
643 taaaatgtcg aggtctcttg aagacttgag aagctgtcac aaggtcacta caagcccaac 1377
644 ctgccccttc actttgcctt cctgagttgg cccactcca cttgggggtc tgcattggat 1437

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

645 tgttagggat aggcagcagg gctgaggcaa ggtaggccaa ctgcaccctt gtcacctgga 1497
646 ggagggccgg ctgctgccc gagctctggc ctaggacct tgccgtgac caagagggag 1557
647 gaccagtgc gggctgtgc accttccctg ctggcctgca cacagctgct cagcaccatt 1617
648 tcattctgga cctgggacct taggagccgg gtgacagcac taaccagacc tccagccact 1677
649 cacagctctt tttaaaaaac agcttcaaaa tatgcagcaa aaaccaatac aacaaaacga 1737
650 gtggcacgat ttatttcaaa ctaggccagc tgggattcca gcttttcttc tactagtctg 1797
651 atgttttata aatcaaaaacc tggttttcct tctctggcat tttttttgt tttttgttt 1857
652 ttggtttttt tttttttttt ggccaaatct cgtggtgttt cgcagaaaaa aatccagaaa 1917
653 atttcaaatg cagttgagta ttctttttta aatgcagatt ttcaaaacat attttttttc 1977
654 aggtggtctt ttttgtgtct ggcttgctga gtgtaaaagt tggtatctgg acgatctgtc 2037
655 tctctgctcc aaagaaattt tggagtgagt ggcagtcctg cgccagcctc gcgggacacg 2097
656 tggtgtacat aagcctctgc agtgcctctt tgtaaatggt ggggttttct gctttgtttt 2157
657 tatttaagaa aataaacacg acataattaa agaaggttct ttcacctggg agcaaatgaa 2217
658 caatagctaa gtgtcttggg atttaaagag taaattattt gtggctttgc tgagtgaag 2277
659 aaggggagca aggggtggtg cccctgggtc cagcatgccc cgccctgag actggctgga 2337
660 aatgctctga ctctgtgaa ggcacagcca gcgttggtg ctgagggagg ccctgctggg 2397
661 acctgatct gggccttct gtccagggc ctatgggcaa ctgcgttgaa aggacgttcg 2457
662 ccaaggccg tgtgtaaata cgaactgctg catggagagg agaggcactg ccggagccct 2517
663 tgccagatct cctcctct ctctgtgcag tagctgtgtg tccgaggtca gtgtgcggaa 2577
664 tcacagcaa ggacgtgaag agatgtacgg gggaaagaga agctggggat tggatgaaag 2637
E--> 665 tcaaaggttg tctactttta gaaaataaaa taccctgaat gg
667 <210> SEQ ID NO: 11
668 <211> LENGTH: 29
669 <212> TYPE: DNA
670 <213> ORGANISM: Artificial Sequence
W--> 672 <220> FEATURE:
W--> 672 <223> OTHER INFORMATION:
W--> 672 <400> 11
E--> 673 cgcaagcttg actgaggcca ccgcaccat
675 <210> SEQ ID NO: 12
676 <211> LENGTH: 29
677 <212> TYPE: DNA
678 <213> ORGANISM: Artificial Sequence
W--> 680 <220> FEATURE:
W--> 680 <223> OTHER INFORMATION:
W--> 680 <400> 12
E--> 681 ctcttgttt cggttgctgc cctcggggc
683 <210> SEQ ID NO: 13
684 <211> LENGTH: 30
685 <212> TYPE: DNA
686 <213> ORGANISM: Artificial Sequence
W--> 688 <220> FEATURE:
W--> 688 <223> OTHER INFORMATION:
W--> 688 <400> 13
E--> 689 ggccccgagg gcagcaaccg aaacaaggag
691 <210> SEQ ID NO: 14
692 <211> LENGTH: 37
693 <212> TYPE: DNA
694 <213> ORGANISM: Artificial Sequence

```

2679 ← insert

see p. 22

29 ← insert

p. 22

29 ← insert

p. 22

30 ← insert

p. 8

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

W--> 696 <220> FEATURE: *P. 22*

W--> 696 <223> OTHER INFORMATION:

W--> 696 <400> 14

E--> 697 gcattacgat gcgccgcag ctcctcagca aaggcca *396 insert*

699 <210> SEQ ID NO: 15

700 <211> LENGTH: 1122

701 <212> TYPE: DNA

702 <213> ORGANISM: Artificial Sequence

704 <300> PUBLICATION INFORMATION:

705 <301> AUTHORS: SEJAL M. MODY, MAURICE K. C. HO, SUSHMA A. JOSHI, and YUNG H. WONG

706 <302> TITLE: Incorporation of GalphaZ-Specific Sequence at the Carboxyl Terminus
Increases the Promiscuity of Galpha16 toward Gi-Coupled Receptors

707 <303> JOURNAL: The American Society for Pharmacology and Experimental Therapeutics

708 <304> VOLUME: 57

709 <306> PAGES: 13-23

710 <307> DATE: 2000

W--> 711 <220> FEATURE: *P. 22*

W--> 711 <223> OTHER INFORMATION:

W--> 711 <400> SEQUENCE: 15

712 atg gcc cgc tgc ctg acc tgg cgc tgc tgc ccc tgg tgc ctg acg gag 48

713 Met Ala Arg Ser Leu Thr Trp Arg Cys Cys Pro Trp Cys Leu Thr Glu

714 1 5 10 15

715 gat gag aag gcc gcc gcc cgg gtg gac cag gag atc aac agg atc ctc 96

716 Asp Glu Lys Ala Ala Ala Arg Val Asp Gln Glu Ile Asn Arg Ile Leu *see p. 9*

717 20 25 30

718 ttg gag cag aag aag cag gac cgc ggg gag ctg aag ctg ctg ctt ttg 144

719 Leu Glu Gln Lys Lys Gln Asp Arg Gly Glu Leu Lys Leu Leu Leu

720 35 40 45

721 ggc cca ggc gag agc ggg aag agc acc ttc atc aag cag atg cgg atc 192

722 Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile

723 50 55 60

724 atc cac ggc gcc ggc tac tgc gag gag gag cgc aag ggc ttc cgg ccc 240

725 Ile His Gly Ala Gly Tyr Ser Glu Glu Glu Arg Lys Gly Phe Arg Pro

726 65 70 75 80

727 ctg gtc tac cag aac atc ttc gtg tcc atg cgg gcc atg atc gag gcc 288

728 Leu Val Tyr Gln Asn Ile Phe Val Ser Met Arg Ala Met Ile Glu Ala

729 85 90 95

730 atg gag cgg ctg cag att cca ttc agc agg ccc gag agc aag cac cac 336

731 Met Glu Arg Leu Gln Ile Pro Phe Ser Arg Pro Glu Ser Lys His His

732 100 105 110

733 gct agc ctg gtc atg agc cag gac ccc tat aaa gtg acc acg ttt gag 384

734 Ala Ser Leu Val Met Ser Gln Asp Pro Tyr Lys Val Thr Thr Phe Glu

735 115 120 125

736 aag cgc tac gct gcg gcc atg cag tgg ctg tgg agg gat gcc ggc atc 432

737 Lys Arg Tyr Ala Ala Ala Met Gln Trp Leu Trp Arg Asp Ala Gly Ile

738 130 135 140

739 cgg gcc tgc tat gag cgt cgg cgg gaa ttc cac ctg ctc gat tca gcc 480

740 Arg Ala Cys Tyr Glu Arg Arg Glu Phe His Leu Leu Asp Ser Ala

741 145 150 155 160

742 gtg tac tac ctg tcc cac ctg gag cgc atc acc gag gag ggc tac gtc 528

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

743 Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Thr Glu Glu Gly Tyr Val
744          165          170          175
745 ccc aca gct cag gac gtg ctc cgc agc cgc atg ccc acc act ggc atc 576
746 Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile
747          180          185          190
748 aac gag tac tgc ttc tcc gtg cag aaa acc aac ctg cgg atc gtg gac 624
749 Asn Glu Tyr Cys Phe Ser Val Gln Lys Thr Asn Leu Arg Ile Val Asp
750          195          200          205
751 gtc ggg ggc cag aag tca gag cgt aag aaa tgg atc cat tgt ttc gag 672
752 Val Gly Gly Gln Lys Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu
753          210          215          220
754 aac gtg atc gcc ctc atc tac ctg gcc tca ctg agt gaa tac gac cag 720
755 Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln
756          225          230          235          240
757 tgc ctg gag gag aac aac cag gag aac cgc atg aag gag agc ctc gca 768
758 Cys Leu Glu Glu Asn Asn Gln Glu Asn Arg Met Lys Glu Ser Leu Ala
759          245          250          255
760 ttg ttt ggg act atc ctg gaa cta ccc tgg ttc aaa agc aca tcc gtc 816
761 Leu Phe Gly Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val
762          260          265          270
763 atc ctc ttt ctc aac aaa acc gac atc ctg gag gag aaa atc ccc acc 864
764 Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Glu Lys Ile Pro Thr
765          275          280          285
766 tcc cac ctg gct acc tat ttc ccc agt ttc cag ggc cct aag cag gat 912
767 Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Lys Gln Asp
768          290          295          300
769 gct gag gca gcc aag agg ttc atc ctg gac atg tac acg agg atg tac 960
770 Ala Glu Ala Ala Lys Arg Phe Ile Leu Asp Met Tyr Thr Arg Met Tyr
771          305          310          315          320
772 acc ggg tgc gtg gac ggc ccc gag ggc agc aac cgc aac aag gag acc 1008
773 Thr Gly Cys Val Asp Gly Pro Glu Gly Ser Asn Arg Asn Lys Glu Thr
774          325          330          335
775 aag gag atc tac tcc cac ttc acc tgc gcc acc gac acc agt aac atc 1056
776 Lys Glu Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Ser Asn Ile
777          340          345          350
778 cag ttt gtc ttc gac gcg gtg aca gac gtc atc ata cag aac aat ctc 1104
779 Gln Phe Val Phe Asp Ala Val Thr Asp Val Ile Ile Gln Asn Asn Leu
780          355          360          365

```

E--> 781 aag tac att ggc ctt tgc
782 Lys Tyr Ile Gly Leu Cys
783 370

1122 ← insert

785 <210> SEQ ID NO: 16

786 <211> LENGTH: 2529

787 <212> TYPE: DNA

788 <213> ORGANISM: Mus musculus

790 <300> PUBLICATION INFORMATION:

791 <308> DATABASE ACCESSION NO: GENBANK AY032622

793 <300> PUBLICATION INFORMATION: 16

insert C3097 and response

794 atg ctt ttc tgg gca gct cac ctg ctg ctc agc ctg cag ctg gcc gtt 48

WJ6

P.13

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

795 Met Leu Phe Trp Ala Ala His Leu Leu Leu Ser Leu Gln Leu Ala Val
796   1           5           10           15
797 gct tac tgc tgg gct ttc agc tgc caa agg aca gaa tcc tct cca ggt 96
798 Ala Tyr Cys Trp Ala Phe Ser Cys Gln Arg Thr Glu Ser Ser Pro Gly
799           20           25           30
800 ttc agc ctc cct ggg gac ttc ctc ctg gca ggc ctg ttc tcc ctc cat 144
801 Phe Ser Leu Pro Gly Asp Phe Leu Leu Ala Gly Leu Phe Ser Leu His
802           35           40           45
803 gct gac tgt ctg cag gtg aga cac aga cct ctg gtg aca agt tgt gac 192
804 Ala Asp Cys Leu Gln Val Arg His Arg Pro Leu Val Thr Ser Cys Asp
805           50           55           60
806 agg tct gac agc ttc aac ggc cat ggc tat cac ctc ttc caa gcc atg 240
807 Arg Ser Asp Ser Phe Asn Gly His Gly Tyr His Leu Phe Gln Ala Met
808   65           70           75           80
809 cgg ttc acc gtt gag gag ata aac aac tcc aca gct ctg ctt ccc aac 288
810 Arg Phe Thr Val Glu Glu Ile Asn Asn Ser Thr Ala Leu Leu Pro Asn
811           85           90           95
812 atc acc ctg ggg tat gaa ctg tat gac gtg tgc tca gag tct tcc aat 336
813 Ile Thr Leu Gly Tyr Glu Leu Tyr Asp Val Cys Ser Glu Ser Ser Asn
814           100          105          110
815 gtc tat gcc acc ctg agg gtg ccc gcc cag caa ggg aca ggc cac cta 384
816 Val Tyr Ala Thr Leu Arg Val Pro Ala Gln Gln Gly Thr Gly His Leu
817           115          120          125
818 gag atg cag aga gat ctt cgc aac cac tcc tcc aag gtg gtg gca ctc 432
819 Glu Met Gln Arg Asp Leu Arg Asn His Ser Ser Lys Val Val Ala Leu
820          130          135          140
821 att ggg cct gat aac act gac cac gct gtc acc act gct gcc ctg ctg 480
822 Ile Gly Pro Asp Asn Thr Asp His Ala Val Thr Thr Ala Ala Leu Leu
823 145           150           155           160
824 agc cct ttt ctg atg ccc ctg gtc agc tat gag gcg agc agc gtg atc 528
825 Ser Pro Phe Leu Met Pro Leu Val Ser Tyr Glu Ala Ser Ser Val Ile
826           165          170          175
827 ctc agt ggg aag cgc aag ttc ccg tcc ttc ttg cgc acc atc ccc agc 576
828 Leu Ser Gly Lys Arg Lys Phe Pro Ser Phe Leu Arg Thr Ile Pro Ser
829           180          185          190
830 gat aag tac cag gtg gaa gtc ata gtg cgg ctg ctg cag agc ttc ggc 624
831 Asp Lys Tyr Gln Val Glu Val Ile Val Arg Leu Leu Gln Ser Phe Gly
832           195          200          205
833 tgg gtc tgg atc tcg ctc gtt ggc agc tat ggt gac tac ggg cag ctg 672
834 Trp Val Trp Ile Ser Leu Val Gly Ser Tyr Gly Asp Tyr Gly Gln Leu
835          210          215          220
836 ggc gta cag gcg ctg gag gag ctg gcc act cca cgg ggc atc tgc gtc 720
837 Gly Val Gln Ala Leu Glu Glu Leu Ala Thr Pro Arg Gly Ile Cys Val
838 225           230           235           240
839 gcc ttc aag gac gtg gtg cct ctc tcc gcc cag gcg ggt gac cca agg 768
840 Ala Phe Lys Asp Val Val Pro Leu Ser Ala Gln Ala Gly Asp Pro Arg
841           245          250          255
842 atg cag cgc atg atg ctg cgt ctg gct cga gcc agg acc acc gtg gtc 816
843 Met Gln Arg Met Met Leu Arg Leu Ala Arg Ala Arg Thr Thr Val Val

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/663,650

DATE: 07/06/2004

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

844          260          265          270
845 gtc gtc ttc tct aac cgg cac ctg gct gga gtg ttc ttc agg tct gtg 864
846 Val Val Phe Ser Asn Arg His Leu Ala Gly Val Phe Phe Arg Ser Val
847          275          280          285
848 gtg ctg gcc aac ctg act ggc aaa gtg tgg atc gcc tcc gaa gac tgg 912
849 Val Leu Ala Asn Leu Thr Gly Lys Val Trp Ile Ala Ser Glu Asp Trp
850          290          295          300
851 gcc atc tcc acg tac atc acc aat gtg ccc ggg atc cag ggc att ggg 960
852 Ala Ile Ser Thr Tyr Ile Thr Asn Val Pro Gly Ile Gln Gly Ile Gly
853 305          310          315          320
854 acg gtg ctg ggg gtg gcc atc cag cag aga caa gtc cct ggc ctg aag 1008
855 Thr Val Leu Gly Val Ala Ile Gln Gln Arg Gln Val Pro Gly Leu Lys
856          325          330          335
857 gag ttt gaa gag tcc tat gtc cag gca gtg atg ggt gct ccc aga act 1056
858 Glu Phe Glu Glu Ser Tyr Val Gln Ala Val Met Gly Ala Pro Arg Thr
859          340          345          350
860 tgc cca gag ggg tcc tgg tgc ggc act aac cag ctg tgc agg gag tgt 1104
861 Cys Pro Glu Gly Ser Trp Cys Gly Thr Asn Gln Leu Cys Arg Glu Cys
862          355          360          365
863 cac gct ttc acg aca tgg aac atg ccc gag ctt gga gcc ttc tcc atg 1152
864 His Ala Phe Thr Thr Trp Asn Met Pro Glu Leu Gly Ala Phe Ser Met
865          370          375          380
866 agc gct gcc tac aat gtg tat gag gct gtg tat gct gtg gcc cac ggc 1200
867 Ser Ala Ala Tyr Asn Val Tyr Glu Ala Val Tyr Ala Val Ala His Gly
868 385          390          395          400
869 ctc cac cag ctc ctg gga tgt acc tct ggg acc tgt gcc aga ggc cca 1248
870 Leu His Gln Leu Leu Gly Cys Thr Ser Gly Thr Cys Ala Arg Gly Pro
871          405          410          415
872 gtc tac ccc tgg cag ctt ctt cag cag atc tac aag gtg aat ttc ctt 1296
873 Val Tyr Pro Trp Gln Leu Leu Gln Gln Ile Tyr Lys Val Asn Phe Leu
874          420          425          430
875 cta cat aag aag act gta gca ttc gat gac aag ggg gac cct cta ggt 1344
876 Leu His Lys Lys Thr Val Ala Phe Asp Asp Lys Gly Asp Pro Leu Gly
877          435          440          445
878 tat tat gac atc atc gcc tgg gac tgg aat gga cct gaa tgg acc ttt 1392
879 Tyr Tyr Asp Ile Ile Ala Trp Asp Trp Asn Gly Pro Glu Trp Thr Phe
880          450          455          460
881 gag gtc att ggt tct gcc tca ctg tct cca gtt cat cta gac ata aat 1440
882 Glu Val Ile Gly Ser Ala Ser Leu Ser Pro Val His Leu Asp Ile Asn
883 465          470          475          480
884 aag aca aaa atc cag tgg cac ggg aag aac aat cag gtg cct gtg tca 1488
885 Lys Thr Lys Ile Gln Trp His Gly Lys Asn Asn Gln Val Pro Val Ser
886          485          490          495
887 gtg tgt acc agg gac tgt ctc gaa ggg cac cac agg ttg gtc atg ggt 1536
888 Val Cys Thr Arg Asp Cys Leu Glu Gly His His Arg Leu Val Met Gly
889          500          505          510
890 tcc cac cac tgc tgc ttc gag tgc atg ccc tgt gaa gct ggg aca ttt 1584
891 Ser His His Cys Cys Phe Glu Cys Met Pro Cys Glu Ala Gly Thr Phe
892          515          520          525

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

893 ctc aac acg agt gag ctt cac acc tgc cag cct tgt gga aca gaa gaa 1632
894 Leu Asn Thr Ser Glu Leu His Thr Cys Gln Pro Cys Gly Thr Glu Glu
895      530      535      540
896 tgg gcc cct gag ggg agc tca gcc tgc ttc tca cgc acc gtg gag ttc 1680
897 Trp Ala Pro Glu Gly Ser Ser Ala Cys Phe Ser Arg Thr Val Glu Phe
898 545      550      555      560
899 ttg ggg tgg cat gaa ccc atc tct ttg gtg cta tta gca gct aac acg 1728
900 Leu Gly Trp His Glu Pro Ile Ser Leu Val Leu Leu Ala Ala Asn Thr
901      565      570      575
902 cta ttg ctg ctg ctg ctg att ggg act gct ggc ctg ttt gcc tgg cgt 1776
903 Leu Leu Leu Leu Leu Leu Ile Gly Thr Ala Gly Leu Phe Ala Trp Arg
904      580      585      590
905 ctt cac acg cct gtt gtg agg tca gct ggg ggt agg ctg tgc ttc ctc 1824
906 Leu His Thr Pro Val Val Arg Ser Ala Gly Gly Arg Leu Cys Phe Leu
907      595      600      605
908 atg ctg ggt tcc ttg gta gct ggg agt tgc agc ctc tac agc ttc ttc 1872
909 Met Leu Gly Ser Leu Val Ala Gly Ser Cys Ser Leu Tyr Ser Phe Phe
910      610      615      620
911 ggg aag ccc acg gtg ccc gcg tgc ttg ctg cgt cag ccc ctc ttt tct 1920
912 Gly Lys Pro Thr Val Pro Ala Cys Leu Leu Arg Gln Pro Leu Phe Ser
913 625      630      635      640
914 ctc ggg ttt gcc att ttc ctc tcc tgt ctg aca atc cgc tcc ttc caa 1968
915 Leu Gly Phe Ala Ile Phe Leu Ser Cys Leu Thr Ile Arg Ser Phe Gln
916      645      650      655
917 ctg gtc atc atc ttc aag ttt tct acc aag gta ccc aca ttc tac cac 2016
918 Leu Val Ile Ile Phe Lys Phe Ser Thr Lys Val Pro Thr Phe Tyr His
919      660      665      670
920 act tgg gcc caa aac cat ggt gcc gga ata ttc gtc att gtc agc tcc 2064
921 Thr Trp Ala Gln Asn His Gly Ala Gly Ile Phe Val Ile Val Ser Ser
922      675      680      685
923 acg gtc cat ttg ttc ctc tgt ctc acg tgg ctt gca atg tgg acc cca 2112
924 Thr Val His Leu Phe Leu Cys Leu Thr Trp Leu Ala Met Trp Thr Pro
925      690      695      700
926 cgg ccc acc agg gag tac cag cgc ttc ccc cat ctg gtg att ctt gag 2160
927 Arg Pro Thr Arg Glu Tyr Gln Arg Phe Pro His Leu Val Ile Leu Glu
928 705      710      715      720
929 tgc aca gag gtc aac tct gtg ggc ttc ctg gtg gct ttc gca cac aac 2208
930 Cys Thr Glu Val Asn Ser Val Gly Phe Leu Val Ala Phe Ala His Asn
931      725      730      735
932 atc ctc ctc tcc atc agc acc ttt gtc tgc agc tac ctg ggt aag gaa 2256
933 Ile Leu Leu Ser Ile Ser Thr Phe Val Cys Ser Tyr Leu Gly Lys Glu
934      740      745      750
935 ctg ccg gag aac tat aac gaa gcc aaa tgt gtc acc ttc agc ctg ctc 2304
936 Leu Pro Glu Asn Tyr Asn Glu Ala Lys Cys Val Thr Phe Ser Leu Leu
937      755      760      765
938 ctc cac ttc gta tcc tgg atc gct ttc ttc acc atg tcc agc att tac 2352
939 Leu His Phe Val Ser Trp Ile Ala Phe Phe Thr Met Ser Ser Ile Tyr
940      770      775      780
941 cag ggc agc tac cta ccc gcg gtc aat gtg ctg gca ggg ctg gcc act 2400

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

942 Gln Gly Ser Tyr Leu Pro Ala Val Asn Val Leu Ala Gly Leu Ala Thr
 943 785 790 795 800
 944 ctg agt ggc ggc ttc agc ggc tat ttc ctc cct aaa tgc tac gtg att 2448
 945 Leu Ser Gly Gly Phe Ser Gly Tyr Phe Leu Pro Lys Cys Tyr Val Ile
 946 805 810 815
 947 ctc tgc cgt cca gaa ctc aac aac aca gaa cac ttt cag gcc tcc atc 2496
 948 Leu Cys Arg Pro Glu Leu Asn Asn Thr Glu His Phe Gln Ala Ser Ile
 949 820 825 830
 E--> 950 cag gac tac acg agg cgc tgc ggc act acc tga 2529 ← insert
 951 Gln Asp Tyr Thr Arg Arg Cys Gly Thr Thr
 952 835 840
 954 <210> SEQ ID NO: 17
 955 <211> LENGTH: 2532
 956 <212> TYPE: DNA
 957 <213> ORGANISM: Mus musculus
 959 <300> PUBLICATION INFORMATION:
 960 <308> DATABASE ACCESSION NO: GENBANK AY032623 insert <3097 and response
 962 <300> PUBLICATION INFORMATION: 17
 963 atg gga ccc cag gcg agg aca ctc cat ttg ctg ttt ctc ctg ctg cat 48
 964 Met Gly Pro Gln Ala Arg Thr Leu His Leu Leu Phe Leu Leu Leu His
 965 1 5 10 15
 966 gct ctg cct aag cca gtc atg ctg gta ggg aac tcc gac ttt cac ctg 96
 967 Ala Leu Pro Lys Pro Val Met Leu Val Gly Asn Ser Asp Phe His Leu
 968 20 25 30
 969 gct ggg gac tac ctc ctg ggt ggc ctc ttt acc ctc cat gcc aac gtg 144
 970 Ala Gly Asp Tyr Leu Leu Gly Gly Leu Phe Thr Leu His Ala Asn Val
 971 35 40 45
 972 aag agt gtc tct cac ctc agc tac ctg cag gtg ccc aag tgc aat gag 192
 973 Lys Ser Val Ser His Leu Ser Tyr Leu Gln Val Pro Lys Cys Asn Glu
 974 50 55 60
 975 tac aac atg aag gtg ttg ggc tac aac ctc atg cag gcc atg cga ttc 240
 976 Tyr Asn Met Lys Val Leu Gly Tyr Asn Leu Met Gln Ala Met Arg Phe
 977 65 70 75 80
 978 gcc gtg gag gaa atc aac aac tgt agc tct ttg ctg ccc ggc gtg ctg 288
 979 Ala Val Glu Glu Ile Asn Asn Cys Ser Ser Leu Leu Pro Gly Val Leu
 980 85 90 95
 981 ctc ggc tac gag atg gtg gat gtc tgc tac ctc tcc aac aat atc cag 336
 982 Leu Gly Tyr Glu Met Val Asp Val Cys Tyr Leu Ser Asn Asn Ile Gln
 983 100 105 110
 984 cct ggg ctc tac ttc ctg tca cag ata gat gac ttc ctg ccc atc ctc 384
 985 Pro Gly Leu Tyr Phe Leu Ser Gln Ile Asp Asp Phe Leu Pro Ile Leu
 986 115 120 125
 987 aaa gac tac agc cag tac agg ccc caa gtg gtg gct gtt att ggc cca 432
 988 Lys Asp Tyr Ser Gln Tyr Arg Pro Gln Val Val Ala Val Ile Gly Pro
 989 130 135 140
 990 gac aac tct gag tct gcc atc acc gtg tcc aac att ctc tcc tac ttc 480
 991 Asp Asn Ser Glu Ser Ala Ile Thr Val Ser Asn Ile Leu Ser Tyr Phe
 992 145 150 155 160
 993 ctc gtg cca cag gtc aca tat agc gcc atc acc gac aag ctg caa gac 528

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:23

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

994 Leu Val Pro Gln Val Thr Tyr Ser Ala Ile Thr Asp Lys Leu Gln Asp
995          165          170          175
996 aag cgg cgc ttc cct gcc atg ctg cgc act gtg ccc agc gcc acc cac 576
997 Lys Arg Arg Phe Pro Ala Met Leu Arg Thr Val Pro Ser Ala Thr His
998          180          185          190
999 cac atc gag gcc atg gtg caa ctg atg gtt cac ttc cag tgg aac tgg 624
1000 His Ile Glu Ala Met Val Gln Leu Met Val His Phe Gln Trp Asn Trp
1001          195          200          205
1002 atc gtg gtg ctg gtg agc gat gac gat tat ggc cga gag aac agc cac 672
1003 Ile Val Val Leu Val Ser Asp Asp Asp Tyr Gly Arg Glu Asn Ser His
1004          210          215          220
1005 ctg ctg agc cag cgt ctg acc aac act ggc gac atc tgc att gcc ttc 720
1006 Leu Leu Ser Gln Arg Leu Thr Asn Thr Gly Asp Ile Cys Ile Ala Phe
1007 225          230          235          240
1008 cag gag gtt ctg ccc gta cca gaa ccc aac cag gct gtg agg cct gag 768
1009 Gln Glu Val Leu Pro Val Pro Glu Pro Asn Gln Ala Val Arg Pro Glu
1010          245          250          255
1011 gag cag gac caa ctg gac aac atc ctg gac aag ctg cgg cgg act tcg 816
1012 Glu Gln Asp Gln Leu Asp Asn Ile Leu Asp Lys Leu Arg Arg Thr Ser
1013          260          265          270
1014 gcg cgt gtg gtg gtg ata ttc tcg ccg gag ctg agc ctg cac aac ttc 864
1015 Ala Arg Val Val Val Ile Phe Ser Pro Glu Leu Ser Leu His Asn Phe
1016          275          280          285
1017 ttc cgt gag gtg ctg cgc tgg aac ttc acg ggc ttt gtg tgg att gcc 912
1018 Phe Arg Glu Val Leu Arg Trp Asn Phe Thr Gly Phe Val Trp Ile Ala
1019          290          295          300
1020 tct gag tcc tgg gcc atc gac cct gtt cta cac aac ctc aca gag ctg 960
1021 Ser Glu Ser Trp Ala Ile Asp Pro Val Leu His Asn Leu Thr Glu Leu
1022 305          310          315          320
1023 cgc cac acg ggc act ttc ctg ggt gtc acc atc cag agg gtg tcc atc 1008
1024 Arg His Thr Gly Thr Phe Leu Gly Val Thr Ile Gln Arg Val Ser Ile
1025          325          330          335
1026 cct ggc ttc agc cag ttc cga gtg cgc cat gac aag cca ggg tat cgc 1056
1027 Pro Gly Phe Ser Gln Phe Arg Val Arg His Asp Lys Pro Gly Tyr Arg
1028          340          345          350
1029 atg cct aac gag acc agc ctg cgg act acc tgt aac cag gac tgc gac 1104
1030 Met Pro Asn Glu Thr Ser Leu Arg Thr Thr Cys Asn Gln Asp Cys Asp
1031          355          360          365
1032 gcc tgc atg aac atc act gag tcc ttc aac aac gtt ctc atg ctt tcg 1152
1033 Ala Cys Met Asn Ile Thr Glu Ser Phe Asn Asn Val Leu Met Leu Ser
1034          370          375          380
1035 ggg gag cgt gtg gtc tac agc gtg tac tcg gcc gtc tac gcg gtg gcc 1200
1036 Gly Glu Arg Val Val Tyr Ser Val Tyr Ser Ala Val Tyr Ala Val Ala
1037 385          390          395          400
1038 cac acc ctc cac aga ctc ctc cac tgc aat cag gtc cgc tgc acc aag 1248
1039 His Thr Leu His Arg Leu Leu His Cys Asn Gln Val Arg Cys Thr Lys
1040          405          410          415
1041 caa atc gtc tat cca tgg cag cta ctc gag atc tgg cat gtc aac 1296
1042 Gln Ile Val Tyr Pro Trp Gln Leu Leu Arg Glu Ile Trp His Val Asn

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

1043          420          425          430
1044 ttc acg ctc ctg ggc aac cag ctc ttc ttc gac gaa caa ggg gac atg 1344
1045 Phe Thr Leu Leu Gly Asn Gln Leu Phe Phe Asp Glu Gln Gly Asp Met
1046          435          440          445
1047 ccg atg ctc ctg gac atc atc cag tgg cag tgg ggc ctg agc cag aac 1392
1048 Pro Met Leu Leu Asp Ile Ile Gln Trp Gln Trp Gly Leu Ser Gln Asn
1049          450          455          460
1050 ccc ttc caa agc atc gcc tcc tac tcc ccc acc gag acg agg ctg acc 1440
1051 Pro Phe Gln Ser Ile Ala Ser Tyr Ser Pro Thr Glu Thr Arg Leu Thr
1052 465          470          475          480
1053 tac att agc aat gtg tcc tgg tac acc ccc aac aac acg gtc ccc ata 1488
1054 Tyr Ile Ser Asn Val Ser Trp Tyr Thr Pro Asn Asn Thr Val Pro Ile
1055          485          490          495
1056 tcc atg tgt tct aag agt tgc cag cct ggg caa atg aaa aaa ccc ata 1536
1057 Ser Met Cys Ser Lys Ser Cys Gln Pro Gly Gln Met Lys Lys Pro Ile
1058          500          505          510
1059 ggc ctc cac cca tgc tgc ttc gag tgt gtg gac tgt ccg ccg gac acc 1584
1060 Gly Leu His Pro Cys Cys Phe Glu Cys Val Asp Cys Pro Pro Asp Thr
1061          515          520          525
1062 tac ctc aac cga tca gta gat gag ttt aac tgt ctg tcc tgc ccg ggt 1632
1063 Tyr Leu Asn Arg Ser Val Asp Glu Phe Asn Cys Leu Ser Cys Pro Gly
1064          530          535          540
1065 tcc atg tgg tct tac aag aac aac atc gct tgc ttc aag cgg cgg ctg 1680
1066 Ser Met Trp Ser Tyr Lys Asn Asn Ile Ala Cys Phe Lys Arg Arg Leu
1067 545          550          555          560
1068 gcc ttc ctg gag tgg cac gaa gtg ccc act atc gtg gtg acc atc ctg 1728
1069 Ala Phe Leu Glu Trp His Glu Val Pro Thr Ile Val Val Thr Ile Leu
1070          565          570          575
1071 gcc gcc ctg ggc ttc atc agt acg ctg gcc att ctg ctc atc ttc tgg 1776
1072 Ala Ala Leu Gly Phe Ile Ser Thr Leu Ala Ile Leu Leu Ile Phe Trp
1073          580          585          590
1074 aga cat ttc cag acg ccc atg gtg cgc tgc gcg ggc ggc ccc atg tgc 1824
1075 Arg His Phe Gln Thr Pro Met Val Arg Ser Ala Gly Gly Pro Met Cys
1076          595          600          605
1077 ttc ctg atg ctg gtg ccc ctg ctg ctg gcg ttc ggg atg gtc ccc gtg 1872
1078 Phe Leu Met Leu Val Pro Leu Leu Leu Ala Phe Gly Met Val Pro Val
1079          610          615          620
1080 tat gtg ggc ccc ccc acg gtc ttc tcc tgt ttc tgc cgc cag gct ttc 1920
1081 Tyr Val Gly Pro Pro Thr Val Phe Ser Cys Phe Cys Arg Gln Ala Phe
1082 625          630          635          640
1083 ttc acc gtt tgc ttc tcc gtc tgc ctc tcc tgc atc acg gtg cgc tcc 1968
1084 Phe Thr Val Cys Phe Ser Val Cys Leu Ser Cys Ile Thr Val Arg Ser
1085          645          650          655
1086 ttc cag att gtg tgc gtc ttc aag atg gcc aga cgc ctg cca agc gcc 2016
1087 Phe Gln Ile Val Cys Val Phe Lys Met Ala Arg Arg Leu Pro Ser Ala
1088          660          665          670
1089 tac ggt ttc tgg atg cgt tac cac ggg ccc tac gtc ttc gtg gcc ttc 2064
1090 Tyr Gly Phe Trp Met Arg Tyr His Gly Pro Tyr Val Phe Val Ala Phe
1091          675          680          685

```


RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

1092 atc acg gcc gtc aag gtg gcc ctg gtg gcg ggc aac atg ctg gcc acc 2112
1093 Ile Thr Ala Val Lys Val Ala Leu Val Ala Gly Asn Met Leu Ala Thr
1094      690      695      700
1095 acc atc aac ccc att ggc cgg acc gac ccc gat gac ccc aat atc ata 2160
1096 Thr Ile Asn Pro Ile Gly Arg Thr Asp Pro Asp Asp Pro Asn Ile Ile
1097 705      710      715      720
1098 atc ctc tcc tgc cac cct aac tac cgc aac ggg cta ctc ttc aac acc 2208
1099 Ile Leu Ser Cys His Pro Asn Tyr Arg Asn Gly Leu Leu Phe Asn Thr
1100      725      730      735
1101 agc atg gac ttg ctg ctg tcc gtg ctg ggt ttc agc ttc gcg tac gtg 2256
1102 Ser Met Asp Leu Leu Leu Ser Val Leu Gly Phe Ser Phe Ala Tyr Val
1103      740      745      750
1104 ggc aag gaa ctg ccc acc aac tac aac gaa gcc aag ttc atc acc ctc 2304
1105 Gly Lys Glu Leu Pro Thr Asn Tyr Asn Glu Ala Lys Phe Ile Thr Leu
1106      755      760      765
1107 agc atg acc ttc tcc ttc acc tcc tcc atc tcc ctc tgc acg ttc atg 2352
1108 Ser Met Thr Phe Ser Phe Thr Ser Ser Ile Ser Leu Cys Thr Phe Met
1109      770      775      780
1110 tct gtc cac gat ggc gtg ctg gtc acc atc atg gat ctc ctg gtc act 2400
1111 Ser Val His Asp Gly Val Leu Val Thr Ile Met Asp Leu Leu Val Thr
1112 785      790      795      800
1113 gtg ctc aac ttt ctg gcc atc ggc ttg ggg tac ttt ggc ccc aaa tgt 2448
1114 Val Leu Asn Phe Leu Ala Ile Gly Leu Gly Tyr Phe Gly Pro Lys Cys
1115      805      810      815
1116 tac atg atc ctt ttc tac ccg gag cgc aac act tca gct tat ttc aat 2496
1117 Tyr Met Ile Leu Phe Tyr Pro Glu Arg Asn Thr Ser Ala Tyr Phe Asn
1118      820      825      830
E--> 1119 agc atg att cag ggc tac acg atg agg aag agc tag
1120 Ser Met Ile Gln Gly Tyr Thr Met Arg Lys Ser
1121      835      840
1123 <210> SEQ ID NO: 18
1124 <211> LENGTH: 2577
1125 <212> TYPE: DNA
1126 <213> ORGANISM: Mus musculus
1128 <400> SEQUENCE: 18
1129 atg cca gct ttg gct atc atg ggt ctc agc ctg gct gct ttc ctg gag 48
1130 Met Pro Ala Leu Ala Ile Met Gly Leu Ser Leu Ala Ala Phe Leu Glu
1131 1      5      10      15
1132 ctt ggg atg ggg gcc tct ttg tgt ctg tca cag caa ttc aag gca caa 96
1133 Leu Gly Met Gly Ala Ser Leu Cys Leu Ser Gln Gln Phe Lys Ala Gln
1134      20      25      30
1135 ggg gac tac ata ctg ggc ggg cta ttt ccc ctg ggc tca acc gag gag 144
1136 Gly Asp Tyr Ile Leu Gly Gly Leu Phe Pro Leu Gly Ser Thr Glu Glu
1137      35      40      45
1138 gcc act ctc aac cag aga aca caa ccc aac agc atc ccg tgc aac agg 192
1139 Ala Thr Leu Asn Gln Arg Thr Gln Pro Asn Ser Ile Pro Cys Asn Arg
1140      50      55      60
1141 ttc tca ccc ctt ggt ttg ttc ctg gcc atg gct atg aag atg gct gtg 240
1142 Phe Ser Pro Leu Gly Leu Phe Leu Ala Met Ala Met Lys Met Ala Val

```

2532 ← insert

P. 19

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

1143 65          70          75          80
1144 gag gag atc aac aat gga tct gcc ttg ctc cct ggg ctg cgg ctg ggc 288
1145 Glu Glu Ile Asn Asn Gly Ser Ala Leu Leu Pro Gly Leu Arg Leu Gly
1146          85          90          95
1147 tat gac cta ttt gac aca tgc tcc gag cca gtg gtc acc atg aaa tcc 336
1148 Tyr Asp Leu Phe Asp Thr Cys Ser Glu Pro Val Val Thr Met Lys Ser
1149          100          105          110
1150 agt ctc atg ttc ctg gcc aag gtg ggc agt caa agc att gct gcc tac 384
1151 Ser Leu Met Phe Leu Ala Lys Val Gly Ser Gln Ser Ile Ala Ala Tyr
1152          115          120          125
1153 tgc aac tac aca cag tac caa ccc cgt gtg ctg gct gtc atc ggc ccc 432
1154 Cys Asn Tyr Thr Gln Tyr Gln Pro Arg Val Leu Ala Val Ile Gly Pro
1155          130          135          140
1156 cac tca tca gag ctt gcc ctc att aca ggc aag ttc ttc agc ttc ttc 480
1157 His Ser Ser Glu Leu Ala Leu Ile Thr Gly Lys Phe Phe Ser Phe Phe
1158 145          150          155          160
1159 ctc atg cca cag gtc agc tat agt gcc agc atg gat cgg cta agt gac 528
1160 Leu Met Pro Gln Val Ser Tyr Ser Ala Ser Met Asp Arg Leu Ser Asp
1161          165          170          175
1162 cgg gaa acg ttt cca tcc ttc ttc cgc aca gtg ccc agt gac cgg gtg 576
1163 Arg Glu Thr Phe Pro Ser Phe Phe Arg Thr Val Pro Ser Asp Arg Val
1164          180          185          190
1165 cag ctg cag gca gtt gtg act ctg ttg cag aac ttc agc tgg aac tgg 624
1166 Gln Leu Gln Ala Val Val Thr Leu Leu Gln Asn Phe Ser Trp Asn Trp
1167          195          200          205
1168 gtg gcc gcc tta ggg agt gat gat gac tat ggc cgg gaa ggt ctg agc 672
1169 Val Ala Ala Leu Gly Ser Asp Asp Asp Tyr Gly Arg Glu Gly Leu Ser
1170          210          215          220
1171 atc ttt tct agt ctg gcc aat gca cga ggt atc tgc atc gca cat gag 720
1172 Ile Phe Ser Ser Leu Ala Asn Ala Arg Gly Ile Cys Ile Ala His Glu
1173 225          230          235          240
1174 ggc ctg gtg cca caa cat gac act agt ggc caa cag ttg ggc aag gtg 768
1175 Gly Leu Val Pro Gln His Asp Thr Ser Gly Gln Gln Leu Gly Lys Val
1176          245          250          255
1177 ctg gat gta cta cgc caa gtg aac caa agt aaa gta caa gtg gtg gtg 816
1178 Leu Asp Val Leu Arg Gln Val Asn Gln Ser Lys Val Gln Val Val Val
1179          260          265          270
1180 ctg ttt gcc tct gcc cgt gct gtc tac tcc ctt ttt agt tac agc atc 864
1181 Leu Phe Ala Ser Ala Arg Ala Val Tyr Ser Leu Phe Ser Tyr Ser Ile
1182          275          280          285
1183 cat cat ggc ctc tca ccc aag gta tgg gtg gcc agt gag tct tgg ctg 912
1184 His His Gly Leu Ser Pro Lys Val Trp Val Ala Ser Glu Ser Trp Leu
1185          290          295          300
1186 aca tct gac ctg gtc atg aca ctt ccc aat att gcc cgt gtg ggc act 960
1187 Thr Ser Asp Leu Val Met Thr Leu Pro Asn Ile Ala Arg Val Gly Thr
1188 305          310          315          320
1189 gtg ctt ggg ttt ttg cag cgg ggt gcc cta ctg cct gaa ttt tcc cat 1008
1190 Val Leu Gly Phe Leu Gln Arg Gly Ala Leu Leu Pro Glu Phe Ser His
1191          325          330          335

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

1192 tat gtg gag act cac ctt gcc ctg gcc gct gac cca gca ttc tgt gcc 1056
1193 Tyr Val Glu Thr His Leu Ala Leu Ala Ala Asp Pro Ala Phe Cys Ala
1194          340          345          350
1195 tca ctg aat gcg gag ttg gat ctg gag gaa cat gtg atg ggg caa cgc 1104
1196 Ser Leu Asn Ala Glu Leu Asp Leu Glu Glu His Val Met Gly Gln Arg
1197          355          360          365
1198 tgt cca cgg tgt gac gac atc atg ctg cag aac cta tca tct ggg ctg 1152
1199 Cys Pro Arg Cys Asp Asp Ile Met Leu Gln Asn Leu Ser Ser Gly Leu
1200          370          375          380
1201 ttg cag aac cta tca gct ggg caa ttg cac cac caa ata ttt gca acc 1200
1202 Leu Gln Asn Leu Ser Ala Gly Gln Leu His His Gln Ile Phe Ala Thr
1203 385          390          395          400
1204 tat gca gct gtg tac agt gtg gct caa gcc ctt cac aac acc cta cag 1248
1205 Tyr Ala Ala Val Tyr Ser Val Ala Gln Ala Leu His Asn Thr Leu Gln
1206          405          410          415
1207 tgc aat gtc tca cat tgc cac gta tca gaa cat gtt cta ccc tgg cag 1296
1208 Cys Asn Val Ser His Cys His Val Ser Glu His Val Leu Pro Trp Gln
1209          420          425          430
1210 ctc ctg gag aac atg tac aat atg agt ttc cat gct cga gac ttg aca 1344
1211 Leu Leu Glu Asn Met Tyr Asn Met Ser Phe His Ala Arg Asp Leu Thr
1212          435          440          445
1213 cta cag ttt gat gct gaa ggg aat gta gac atg gaa tat gac ctg aag 1392
1214 Leu Gln Phe Asp Ala Glu Gly Asn Val Asp Met Glu Tyr Asp Leu Lys
1215          450          455          460
1216 atg tgg gtg tgg cag agc cct aca cct gta tta cat act gtg ggc acc 1440
1217 Met Trp Val Trp Gln Ser Pro Thr Pro Val Leu His Thr Val Gly Thr
1218 465          470          475          480
1219 ttc aac ggc acc ctt cag ctg cag cag tct aaa atg tac tgg cca ggc 1488
1220 Phe Asn Gly Thr Leu Gln Leu Gln Gln Ser Lys Met Tyr Trp Pro Gly
1221          485          490          495
1222 aac cag gtg cca gtc tcc cag tgt tcc cgc cag tgc aaa gat ggc cag 1536
1223 Asn Gln Val Pro Val Ser Gln Cys Ser Arg Gln Cys Lys Asp Gly Gln
1224          500          505          510
1225 gtt cgc cga gta aag ggc ttt cat tcc tgc tgc tat gac tgc gtg gac 1584
1226 Val Arg Arg Val Lys Gly Phe His Ser Cys Cys Tyr Asp Cys Val Asp
1227          515          520          525
1228 tgc aag gcg ggc agc tac cgg aag cat cca gat gac ttc acc tgt act 1632
1229 Cys Lys Ala Gly Ser Tyr Arg Lys His Pro Asp Asp Phe Thr Cys Thr
1230          530          535          540
1231 cca tgt aac cag gac cag tgg tcc cca gag aaa agc aca gcc tgc tta 1680
1232 Pro Cys Asn Gln Asp Gln Trp Ser Pro Glu Lys Ser Thr Ala Cys Leu
1233 545          550          555          560
1234 cct cgc agg ccc aag ttt ctg gct tgg ggg gag cca gtt gtg ctg tca 1728
1235 Pro Arg Arg Pro Lys Phe Leu Ala Trp Gly Glu Pro Val Val Leu Ser
1236          565          570          575
1237 ctc ctc ctg ctg ctt tgc ctg gtg ctg ggt cta gca ctg gct gct ctg 1776
1238 Leu Leu Leu Leu Leu Cys Leu Val Leu Gly Leu Ala Leu Ala Leu
1239          580          585          590
1240 ggg ctc tct gtc cac cac tgg gac agc cct ctt gtc cag gcc tca ggt 1824

```

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

1241 Gly Leu Ser Val His His Trp Asp Ser Pro Leu Val Gln Ala Ser Gly
1242          595          600          605
1243 ggc tca cag ttc tgc ttt ggc ctg atc tgc cta ggc ctc ttc tgc ctc 1872
1244 Gly Ser Gln Phe Cys Phe Gly Leu Ile Cys Leu Gly Leu Phe Cys Leu
1245          610          615          620
1246 agt gtc ctt ctg ttc cca ggg cgg cca agc tct gcc agc tgc ctt gca 1920
1247 Ser Val Leu Leu Phe Pro Gly Arg Pro Ser Ser Ala Ser Cys Leu Ala
1248 625          630          635          640
1249 caa caa cca atg gct cac ctc cct ctc aca ggc tgc ctg agc aca ctc 1968
1250 Gln Gln Pro Met Ala His Leu Pro Leu Thr Gly Cys Leu Ser Thr Leu
1251          645          650          655
1252 ttc ctg caa gca gct gag acc ttt gtg gag tct gag ctg cca ctg agc 2016
1253 Phe Leu Gln Ala Ala Glu Thr Phe Val Glu Ser Glu Leu Pro Leu Ser
1254          660          665          670
1255 tgg gca aac tgg cta tgc agc tac ctt cgg gga ctc tgg gcc tgg cta 2064
1256 Trp Ala Asn Trp Leu Cys Ser Tyr Leu Arg Gly Leu Trp Ala Trp Leu
1257          675          680          685
1258 gtg gta ctg ttg gcc act ttt gtg gag gca gca cta tgt gcc tgg tat 2112
1259 Val Val Leu Leu Ala Thr Phe Val Glu Ala Ala Leu Cys Ala Trp Tyr
1260          690          695          700
1261 ttg aac gct ttc cca cca gag gtg gtg aca gac tgg tca gtg ctg ccc 2160
1262 Leu Asn Ala Phe Pro Pro Glu Val Val Thr Asp Trp Ser Val Leu Pro
1263 705          710          715          720
1264 aca gag gta ctg gag cac tgc cac gtg cgt tcc tgg gtc agc ctg ggc 2208
1265 Thr Glu Val Leu Glu His Cys His Val Arg Ser Trp Val Ser Leu Gly
1266          725          730          735
1267 ttg gtg cac atc acc aat gca atg tta gct ttc ctc tgc ttt ctg ggc 2256
1268 Leu Val His Ile Thr Asn Ala Met Leu Ala Phe Leu Cys Phe Leu Gly
1269          740          745          750
1270 act ttc ctg gta cag agc cag cct ggc cgc tac aac cgt gcc cgt ggt 2304
1271 Thr Phe Leu Val Gln Ser Gln Pro Gly Arg Tyr Asn Arg Ala Arg Gly
1272          755          760          765
1273 ctc acc ttc gcc atg cta gct tat ttc atc acc tgg gtc tct ttt gtg 2352
1274 Leu Thr Phe Ala Met Leu Ala Tyr Phe Ile Thr Trp Val Ser Phe Val
1275          770          775          780
1276 ccc ctc ctg gcc aat gtg cag gtg gcc tac cag cca gct gtg cag atg 2400
1277 Pro Leu Leu Ala Asn Val Gln Val Ala Tyr Gln Pro Ala Val Gln Met
1278 785          790          795          800
1279 ggt gct atc cta gtc tgt gcc ctg ggc atc ctg gtc acc ttc cac ctg 2448
1280 Gly Ala Ile Leu Val Cys Ala Leu Gly Ile Leu Val Thr Phe His Leu
1281          805          810          815
1282 ccc aag tgc tat gtg ctt ctt tgg ctg cca aag ctc aac acc cag gag 2496
1283 Pro Lys Cys Tyr Val Leu Leu Trp Leu Pro Lys Leu Asn Thr Gln Glu
1284          820          825          830
1285 ttc ttc ctg gga agg aat gcc aag aaa gca gca gat gag aac agt ggc 2544
1286 Phe Phe Leu Gly Arg Asn Ala Lys Lys Ala Ala Asp Glu Asn Ser Gly
1287          835          840          845
E--> 1288 ggt ggt gag gca gct cag gga cac aat gaa tga
1289 Gly Gly Glu Ala Ala Gln Gly His Asn Glu

```

2577 ← insert

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

```

1290      850      855
1292 <210> SEQ ID NO: 19
1293 <211> LENGTH: 29
1294 <212> TYPE: DNA
1295 <213> ORGANISM: Artificial Sequence
W--> 1297 <220> FEATURE:
W--> 1297 <223> OTHER INFORMATION:
W--> 1297 <400> 19
E--> 1298 ggaattcatg cttttctggg cagctcacc
1300 <210> SEQ ID NO: 20
1301 <211> LENGTH: 38
1302 <212> TYPE: DNA
1303 <213> ORGANISM: Artificial Sequence
W--> 1305 <220> FEATURE:
W--> 1305 <223> OTHER INFORMATION:
W--> 1305 <400> 20
E--> 1306 gcattacgat gggccgctc aggtagtgcc gcagcgcc
1308 <210> SEQ ID NO: 21
1309 <211> LENGTH: 27
1310 <212> TYPE: DNA
1311 <213> ORGANISM: Artificial Sequence
W--> 1313 <220> FEATURE:
W--> 1313 <223> OTHER INFORMATION:
W--> 1313 <400> 21
E--> 1314 ggaattcatg ggacccagg cgaggac
1316 <210> SEQ ID NO: 22
1317 <211> LENGTH: 40
1318 <212> TYPE: DNA
1319 <213> ORGANISM: Artificial Sequence
W--> 1321 <220> FEATURE:
W--> 1321 <223> OTHER INFORMATION:
W--> 1321 <400> 22
E--> 1322 gcattacgat gggccgctc agctcttctc catcgtgtag
1324 <210> SEQ ID NO: 23
1325 <211> LENGTH: 29
1326 <212> TYPE: DNA
1327 <213> ORGANISM: Artificial Sequence
W--> 1329 <220> FEATURE:
W--> 1329 <223> OTHER INFORMATION:
W--> 1329 <400> 23
E--> 1330 ggaattcatg ccagctttgg ctatcatgg
1332 <210> SEQ ID NO: 24
1333 <211> LENGTH: 41
1334 <212> TYPE: DNA
1335 <213> ORGANISM: Artificial Sequence
W--> 1337 <220> FEATURE:
W--> 1337 <223> OTHER INFORMATION:
W--> 1337 <400> 24
E--> 1338 gcattacgat gggccgctc attcattgtg ttctgagct g

```

P.22

29< insert

P.22

38< insert

P.22

27< insert

P.22

40< insert

P.22

29< insert

P.22

41< insert

see P.21

RAW SEQUENCE LISTING

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:24

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

E--> 1339 1

E--> 1342 1

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/663,650

DATE: 07/06/2004
TIME: 15:31:25

Input Set : A:\US-972-Sequence.txt
Output Set: N:\CRF4\07062004\J663650.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:4; Line(s) 186

Seq#:15; Line(s) 706

Use of <220> Feature (NEW RULES):

error explanation
Sequence(s) are missing the <220> Feature and associated headings.

Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or "Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp.29631-32) (Sec.1.823 of new Rules)

Seq#:4,7,8,11,12,13,14,15,19,20,21,22,23,24

VERIFICATION SUMMARY

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:25

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

L:4 M:283 W: Missing Blank Line separator, <120> field identifier
 L:5 M:270 C: Current Application Number differs, Replaced Current Application No
 L:5 M:271 C: Current Filing Date differs, Replaced Current Filing Date
 L:0 M:201 W: Mandatory field data missing, <130> FILE REFERENCE
 L:5 M:283 W: Missing Blank Line separator, <160> field identifier
 L:15 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:1
 L:73 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:2
 L:131 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:3
 L:192 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:4, <213>
 ORGANISM:Artificial Sequence
 L:192 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:4, <213>
 ORGANISM:Artificial Sequence
 L:192 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:192
 L:365 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:6
 L:443 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:1353 SEQ:6
 L:450 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:7, <213>
 ORGANISM:Artificial Sequence
 L:450 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:7, <213>
 ORGANISM:Artificial Sequence
 L:450 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:450
 L:451 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:29 SEQ:7
 L:458 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:8, <213>
 ORGANISM:Artificial Sequence
 L:458 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:8, <213>
 ORGANISM:Artificial Sequence
 L:458 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:8,Line#:458
 L:459 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:37 SEQ:8
 L:469 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:9
 L:469 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:9 differs:8
 L:501 M:254 E: No. of Bases conflict, LENGTH:Input:669 Counted:699 SEQ:9
 L:567 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:10
 L:665 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:2679 SEQ:10
 L:672 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:11, <213>
 ORGANISM:Artificial Sequence
 L:672 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:11, <213>
 ORGANISM:Artificial Sequence
 L:672 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:11,Line#:672
 L:673 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:29 SEQ:11
 L:680 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:12, <213>
 ORGANISM:Artificial Sequence
 L:680 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:12, <213>
 ORGANISM:Artificial Sequence
 L:680 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:12,Line#:680
 L:681 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:29 SEQ:12
 L:688 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:13, <213>
 ORGANISM:Artificial Sequence
 L:688 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:13, <213>
 ORGANISM:Artificial Sequence
 L:688 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:13,Line#:688
 L:689 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:30 SEQ:13
 L:696 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:14, <213>
 ORGANISM:Artificial Sequence
 L:696 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:14, <213>

ORGANISM:Artificial Sequence

L:696 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:14,Line#:696

L:697 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:37 SEQ:14

L:711 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:15, <213>

ORGANISM:Artificial Sequence

L:711 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:15, <213>

ORGANISM:Artificial Sequence

L:711 M:283 W: Missing Blank Line separator, <400> field identifier

L:711 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:15,Line#:711

L:781 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:1122 SEQ:15

L:793 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:16

VERIFICATION SUMMARY

DATE: 07/06/2004

PATENT APPLICATION: US/10/663,650

TIME: 15:31:25

Input Set : A:\US-972-Sequence.txt

Output Set: N:\CRF4\07062004\J663650.raw

L:950 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:2529 SEQ:16 ✓
L:962 M:256 W: Invalid Numeric Header Field, Identifier <309> Expected, SEQ:17
L:1119 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:2532 SEQ:17 ✓
L:1288 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:2577 SEQ:18 ✓
L:1297 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:19, <213>
ORGANISM:Artificial Sequence
L:1297 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:19, <213>
ORGANISM:Artificial Sequence
L:1297 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:19,Line#:1297
L:1298 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:29 SEQ:19 ✓
L:1305 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:20, <213>
ORGANISM:Artificial Sequence
L:1305 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:20, <213>
ORGANISM:Artificial Sequence
L:1305 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:20,Line#:1305
L:1306 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:38 SEQ:20 ✓
L:1313 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:21, <213>
ORGANISM:Artificial Sequence
L:1313 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:21, <213>
ORGANISM:Artificial Sequence
L:1313 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:21,Line#:1313
L:1314 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:27 SEQ:21 ✓
L:1321 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:22, <213>
ORGANISM:Artificial Sequence
L:1321 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:22, <213>
ORGANISM:Artificial Sequence
L:1321 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:22,Line#:1321
L:1322 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:40 SEQ:22 ✓
L:1329 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:23, <213>
ORGANISM:Artificial Sequence
L:1329 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:23, <213>
ORGANISM:Artificial Sequence
L:1329 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:23,Line#:1329
L:1330 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:29 SEQ:23 ✓
L:1337 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ#:24, <213>
ORGANISM:Artificial Sequence
L:1337 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:24, <213> ✓
ORGANISM:Artificial Sequence
L:1337 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:24,Line#:1337
L:1338 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:41 SEQ:24
M:254 Repeated in SeqNo=24